AMENDMENTS TO THE CLAIMS

1. An analog to digital converter comprising:

an input stage having an input and including a sample and hold circuit;

a plurality of analog to digital stages serially coupled with said input stage and with one another; and

a reference voltage circuit adapted to provide a reference voltage to each analog to digital stage of said plurality of analog to digital stages, the reference voltage circuit comprising:

a programmable current supply coupled in series with a resistor and an active load between a source of supply potential and a source of ground potential;

a differential amplifier having a first differential input and a second differential input, said first differential input coupled through a first capacitor and a switching device to a first terminal of said resistor, said second differential input coupled through a second capacitor and a second switching device to a second terminal of said resistor;

a third switching device having a first end coupled to said first capacitor and to said first switching device, and a second end coupled to said second capacitor and to said second switching device;

a third capacitor coupled between a first differential output of said differential amplifier and said first differential input;

a fourth capacitor coupled between a second differential output of said differential amplifier and said second differential input;

a fourth switching device coupled in parallel with said third capacitor and adapted to switchingly bypass said third capacitor; and

a fifth switching device coupled in parallel with said fourth capacitor and adapted to switchingly bypass said fourth capacitor.

Claims 2-40 (Cancelled).